

separable from his physical. Its function, indeed, is to destroy Dualism on the one hand, as pure metaphysics destroys it on the other; and so to exhibit human nature, not as a duality, but as an unity under different aspects. We cannot do this by means of Metaphysics alone, because the question of Mental Physiology keeps obtruding itself, and so long as it is not explicitly recognised [keeps] suggesting uneasy suspicions that our synthesis has not been thorough.

The whole theory of Evolution has the same function. This is its legitimate place in philosophy. It has too often been tempted to assume an illegitimate one, and to pose as explaining those facts of sense-perception which it had to start by assuming. Metaphysics also has assumed an illegitimate function by endeavouring to evolve the universe from abstract conceptions.

The position which I desire to establish is that Mental Physiology and Evolution have their place in philosophy so-called, and are not interlopers under false pretences.

UNIVERSALS IN LOGIC.

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I.

THE consideration of Universals takes us into the very heart of the whole subject of Logic, universals being bound up with all thinking, which cannot and does not arise or proceed, except by creating and dealing with them. They are more familiarly known by the name of General Terms, their generality or universality consisting in each of them being applicable to, or predicable of, several particular, individual, or singular terms; which latter are the derivatives of general or universal terms, and only as such derivatives have a place in Logic. All language, barring proper names, is made up of general terms, that is, words expressing general ideas, or ideas embracing several instances of the meaning expressed by the word. Singular things are expressed in thought-conveying language by the combination of two or more general terms, as for instance, *this table, the first day of the year, the present Conservative government*. The question of the nature and origin of Universals is therefore one of cardinal importance.

In fact the formation of universals or general terms is the first step taken in thought, as distinguished from the states of conscious-

ness which supply its material. And as such it constitutes the first of the three great divisions under which Logic considers the operations with which it deals, namely, that of Simple Apprehension or Conception. Simple apprehension is, in Logic, conception in its lowest terms. And all concepts are, in virtue of being simply apprehended, general terms or universals. It is but natural that controversy should prevail on a point of such significance for logical theory and practice.

I particularly regret Mr. Dziewicki's unavoidable absence this evening, inasmuch as we should no doubt have heard from him a far better and fuller exposition of the scholastic doctrine on this point, than I can supply, especially in so brief a paper as the present. I will, however, endeavour to make up for my deficiencies, by reading to you one or two passages from the *Logic* of Father Richard F. Clarke, S.J., published last year (1889), and forming part of the Stonyhurst Manuals of Catholic Philosophy. Having said that simple apprehension depends on the process of abstraction, the writer thus proceeds (pp. 104 to 106):—

“Thus, when a horse is presented to me, *Abstraction* enables me to withdraw my mind from the fact of his being race-horse or dray-horse, chestnut or grey, fast or slow trotter, healthy or diseased, and to concentrate my attention on that which belongs to him *as a horse*, and thus to draw out of him that which constitutes his essence and which we may call his *equinity*. In virtue of my rational nature I fix my mental gaze on that mysterious entity which makes him what he is, I grasp or apprehend his equinity, I perceive intellectually that hidden something which is the substratum of all his qualities, the root whence the varying characteristics which mark him out as a horse, all take their origin. It is in the assertion of this faculty of *Abstraction*, as the *power of drawing out of the object something which is really there independently of the mind that draws it forth*, that consists the whole distinction between scholastic and the so-called modern philosophy. It is in the definition of Simple Apprehension as not merely the grasping into one certain qualities of the object selected by the mind, but the grasping by the mind of an *objective* reality in the object, whence certain qualities flow quite independently of the mind which apprehends them, that consists the central doctrine which gives to the philosophy of the Catholic Church a bulwark against the inroads of scepticism, impossible to any system which has lost its hold on this central and vital truth. Modern error starts with misconceiving the very first operation of Thought; with such a foundation we cannot expect the superstructure to be remarkable for solidity.

“From the *process* of Simple Apprehension we must now turn to

the result of the process, from the act to that which the act engenders, from conception to the concept.

"We have seen that whatever is received into any faculty has to accommodate itself to the nature of the faculty, and consequently that the image of the external object received into the intellect must be something supra-sensible and spiritual. It has been grasped or apprehended by the intellect, and transferred so to speak into it, and it has consequently been purified of the materiality clinging to the image present to the imagination, and prepared for its abode in the sphere of immaterial Thought. It is thus no longer the representation of one single object and no more; it is now applicable to each and all of a whole class of objects; it is no longer a *particular*, it is an *universal*. It is not the sensible image stripped of those attributes peculiar to the individual as such and applicable to a number of objects by reason of its vagueness. It belongs to quite a different sphere; it is raised above the region of sense to the region of intellect and of *Thought* properly so called."

In an earlier passage of the same work the author had explained the meaning to be attached to the word *Thought* (p. 5).

"*Thought* is also used in the narrower and stricter sense of the exercise of our intellectual faculties properly so called, of that immaterial faculty which brings within the range of our knowledge things above and beyond sense, which recognises, in things sensible that which is supra-sensible, and contemplates under the external appearance the underlying nature."—And so on.

Returning to Simple Apprehension, we read again as follows (p. 141-2):—

"Our Catholic theory of Simple Apprehension or Conception, on the other hand, is that it is the grasping by the intellect of that supra-sensible entity which underlies the sensible and material qualities of the things of sense. It is the apprehension of that which makes the thing to be what it is. The intellect pierces through the veil of sense to something which lies beneath and beyond it, and which is altogether beyond the reach of the imagination, or any other material faculty. It attains the true nature of the object which constitutes its essence, a nature which it shares with all other objects belonging to the same class and called by the same name: a nature which is perfectly alike in all, and, as conceived by us, is not only alike in all, but the same in all; a nature which is the source of the common qualities of the objects, causing them to resemble one another and to make upon us similar impressions: a nature to which we never could attain by the stripping off of some of the qualities of a number of objects, or by any exclusive fixing of the attention on one group of attributes to the exclusion of the rest: a

nature which can be reached by the intellect, and by the intellect alone, in virtue of its immaterial and supra-sensible character."

Of course, you will understand that, in selecting these passages, I confine myself to the bare point under consideration, for the full exposition of which, and for arguments in support of it, I must refer you to the work quoted. Still, these passages are sufficiently explicit to justify the following criticism, which reduces itself to two points. The first is, that the doctrine ignores the distinction between processes of knowledge and processes of thought, in defining the process of thought called simple apprehension by the kind of knowledge it is supposed to procure; whereas Logic properly deals only with processes of thought as such, irrespective of what knowledge may be procured by the thinking process. And secondly, it represents the nature of the thinking agent on the one hand, and the objects known by it on the other, by means of terms which cannot themselves be positively construed to thought; I mean by those of an immaterial intellect and an immaterial object, as, for instance, "equinity" in one of the passages read.

I will say nothing on this latter objection, because the reply is always conceivably possible:—Though *you* cannot possibly construe these things to thought, *we* can; and if you can *not*,—endeavour to learn; a reply which is often very effective as an argument *ad verecundiam*. But the case is different with the first objection. It points to a fundamental error in the very conception of Logic, that of making it include a theory of Being. It is, in principle, precisely the same objection which I had recently occasion to bring against Hegel's Logic, since both alike confuse thought with its object; the difference being that, whereas Hegel makes thought the sole necessary producer of its objects, the present theory suspends its definitions of thought on the special nature of the objects which it is formed to perceive. It follows that some theory of the nature of these objects is a necessary part of Scholastic Logic. And then, since these objects are Universals, we are called upon to embrace some form of what is called Realism, as a logical theory, notwithstanding that it is one with which Logic, as the theory of Thinking, has really nothing to do. Without some form of Realism, Scholastic Logic would be impossible.

Thus at page 163 of the work before cited, we read:—

"We have now had before us the various doctrines respecting Universals. We have seen that the errors respecting them are closely allied to the errors respecting Simple Apprehension or Conception. They commence with confusion of thought and they lead on to utter scepticism. These errors are multiform, but may be summed up under three heads:—

"1. The Ultra-Realists maintain that Universals as such have a

real existence outside the mind—either as self-existent forms wandering about the world, or as existing in the Divine Intellect—and that when we form a general idea the mind grasps one of these forms, or contemplates some of the ideas in the mind of God.

"2. The Nominalists hold, on the other hand, that Universals as such have no sort of existence except in general names, which are a useful shorthand nomenclature under which classes may be summed up. When we form a general idea we really think of certain attributes which are individual, and which we observed in an individual, but which we assign to other individuals by reason of a supposed resemblance existing among them.

"3. The Conceptualists assert that Universals exist in the mind and are the creation of the mind, though based on certain similarities observed in a number of individuals: that, consequently, they are something relative, not absolute. In the act of Simple Apprehension we identify these similar attributes and give them a common name.

"4. The Schoolmen, following Aristotle and St. Thomas, who may be called Moderate Realists, assert that Universals exist outside the mind, but not *as Universals*; that in the act of Simple Apprehension the intellect abstracts from the individual apprehended the universal concept, and takes cognisance of the individual through the concept.

This confusion of what belongs to thought with what belongs to knowledge, was virtually seen through and remedied at the epoch of the Renaissance, when the pursuit of scientific knowledge was placed on an independent basis of observation, experiment, and induction and when consequently the laws of thought alone, as distinguished from the methods of using it for the acquisition of knowledge, were left to Logic as its legitimate and undisputed domain. It would have been difficult to trammel the exercise of thought in the pursuit of knowledge more effectively, than by throwing the ægis of Logic over the assumption, that the perception of some immaterial entity was necessary to constitute a genuine act of thought. That was the trammel which science shook off at the Renaissance epoch; and the liberation of science, wherever it was effected, rested on the surrender of the assumption, and carried with it the reform of Logic. The existence of immaterial entities is not a question which Logic is competent to determine.

II.

I pass in the next place to consider the nature and mode of origin of concepts, general terms, or universals, as revealed by simple analysis of experience, without resting the view taken of them upon assumptions regarding the nature or reality of the objects known, or knowledge acquired by means of them. Here I may be very brief,

more especially as I have said so much on this point in my recent address, at the beginning of the Session. An act of attention to any perceptual datum for the purpose of harmonising it with other parts of the content of consciousness present at the time, and either with or without recognition of that purpose as a purpose, turns that datum into a concept or universal, which is expressed in language by a general term. What this act of attention does, simply as an act taken abstractedly *per se*, is expressed by the Postulates of Logic, or Laws of Identity, Contradiction, and Excluded Middle. Any datum so fixed on by attention is thereby conceived (1) as being itself alone, and (2) as expectant of some modification or addition by combination with other data. Its expectancy, which is due to the act of attention, constitutes its potential generality. It is originally born in consciousness as a percept, and is now re-born in conscious thought as a concept, by the act of attention directed to harmonise it with other data. And the word or other symbol, which we use to recall and express it, being equally applicable to all its similars, whenever and wherever they may occur, is a general term, the whole meaning of which is from the first, and always, waiting to be filled in. Such, very briefly stated, is the whole mystery of universals, so far as Logic is concerned. The nature and validity of the *knowledge* which we acquire, or suppose ourselves to acquire, by their means, is another matter, depending on quite other sciences.

III.

It seems most advisable, in a paper intended to bring before you for discussion the main principles and outlines of the subject of Universals, that I should omit those parts of it which may be learnt from ordinary manuals, and the controversies concerning which are for the most part of minor importance, such as, for instance, the relation of the Categories of Aristotle to his Four Heads of Predicables, the doctrines of Opposition, of Comprehension and Extension of Concepts, of Definition and Division, of the Scala Generum, and so on, and proceed at once to the psychology of the subject, that is, to the connection of the conceptual process with physiological functions upon which it depends. Psychology is nothing else than the study of the connection between states and processes of consciousness generally and the proximate real conditions upon which they depend. And to put the functions of what is called popularly the mind, but scientifically the brain and nervous system, side by side with the processes of consciousness known as thinking, comparing, generalising, conceiving, which are their dependent concomitants described in logical nomenclature, is a valuable means of controlling and testing the accuracy of both classes of processes.

In the first place, then, we find, that the process of conception belongs to the larger field of processes which may be called indifferently Redintegration, Ideation, or Association of Ideas. The neuro-cerebral functions upon which these processes immediately depend are subject to one cardinal distinction, in whatever part of the neuro-cerebral organism they may at any time be taking place, I mean the distinction between the reception of impressions, or stimuli, and the re-action which takes place in consequence of that reception. But here it must be remembered, that both the reception and the re-action severally are processes consisting of actions and re-actions in nervous substance, of which subordinate actions and re-actions I do not now speak. I am speaking only of the processes taken each in its entirety, and described by its result, reception of impressions in the one case, and imparting of impressions in the other. The reception is for the most part accompanied by feelings and ideas, and the re-action which follows involves the reception of another impression in that part of the system, whatever it may be, upon which it is directed. It is impossible to doubt that those processes of consciousness which we call volitions, depend upon some special class or kind of the re-active functions of the neuro-cerebral organism, as distinguished from its receptive functions.

Now we know far more about the detail of the concomitant processes of consciousness, volition included, than we know about the detail of the physiological processes on which they depend. The consequence of this is, that we have to speak of the detail of the latter in terms of the detail of the former. We cannot, for instance, as yet, say, what particular class of cerebral re-actions, describing it in terms of physiology, is that upon which volitions depend; we have to describe it as that class which is accompanied by volitions. Nevertheless, we cannot doubt that some class there is, upon which volitions are dependent. And it is this special class of re-actions, as distinguished from receptions and from other cases of re-actions, which corresponds to the great and cardinal distinction in redintegrative processes of consciousness, I mean the distinction between spontaneous and voluntary redintegration, ideation, or association of ideas.

We can now see, not indeed the reason, but the fact that there is some real and positive reason, if we could but extend our physiological knowledge, for the conspicuous position which conception occupies among processes of consciousness logically described. For conception is nothing but the logical description in terms of consciousness of the lowest and simplest act of volition arising within consciousness, and making part of a series or complex of states of consciousness of which we are conscious previous to the moment of its arising. This

act is an act of attention for the purpose of harmonising one of these states with others, the immediate result of the act being to make that state a concept, an universal, or a general term. Thus it is, that the cardinal distinction in all logic coincides with some mode, not yet fully known to us, of the cardinal distinction in all neural physiology.

Our result so far is, that Redintegration, Ideation, or Association of Ideas, falls into two main divisions, (1) spontaneous, and (2) voluntary; of which the former supplies the pabulum or material of the latter, and the latter consists of modifications of the former; the two processes going on side by side with one another, at the same time that one is always being, part by part, modified by the other, and then allowing the parts which are so modified from time to time to fall back again, and take their place in the spontaneous order. In other words, conceptual volition is perpetually modifying the spontaneous processes and material of represented images and feelings, and more and more reducing their chaos to order, until in the end the whole mass of what we may call our mental furniture becomes penetrated and as it were lit up with the light of thought kindled from within.

One of the most efficacious ways of bringing psychology to bear on the discovery of the physiological functions actually employed in redintegration is that of taking it on its historical side, the side of Anthropology, which includes the two branches, evolution of the race, and evolution of the individual. It is in this way that Mr. Romanes has approached the subject in his recent admirable work, *Mental Evolution in Man*. I think I cannot do better than conclude this paper with a brief sketch of the psychological results which he has obtained and set forth at length in that work, harmonising, as I think they do, so fully with the general logical and physiological outline which I have just attempted to give.

In the historical method, the distinctions are taken between actual stages, earlier and later, succeeding one another in the life of the individual or of the race. What Mr. Romanes has done, is, first, to interpose a class of mental states, to which he gives the name of Recepts, between the classes of merely remembered percepts on the one hand, and fully developed logical concepts on the other; and then, within the classes of Recepts and of Concepts, to mark out, by means of carefully made and luminously marshalled observations, two subdivisions, a lower and a higher. These four classes, lower and higher recepts, and lower and higher concepts, are then shown to be represented by distinct stages in the life of the human infant.

I put together, mostly in his own language, the following brief statement from his general summary. We have at p. 395-6 :

1. Mere memories of perceptions :—Locke's Simple, Particular, or Concrete ideas.

2. Recepts :—Locke's Complex, Compound, or Mixed Ideas. Their "orderly grouping is due to an unintentional or automatic activity on the part of the percipient mind." Expressed by *Denotative* terms, not general, but only *generic*.

3. Concepts :—Locke's General, Abstract, or Notional Ideas.—Due to an intentional and self-conscious activity of the mind, reflecting on its ideas as such, *i.e.*, as distinguished from the objects which they represent, and therefore as being either true or false. Expressed by *Denominative* or *Predicative* terms; not merely generic but *general*.

This lies at the basis of the further classification which meets us at p. 403-4, where Recepts are again distinguished into lower and higher, and Concepts the same. Of these,

1. Lower Recepts are common to the higher animals and very young children.

2. Higher Recepts are peculiar to children as they grow up, but *prior* to the dawn of self-consciousness.

3. Lower Concepts are the self-conscious naming of *Recepts*.

4. Higher Concepts are the self-conscious classification and naming of *Concepts*.

I welcome these results because they contain so distinct a recognition and attestation of what I have long maintained to be the cardinal governing distinction in the psychology of consciousness, I mean that between spontaneous and voluntary reintegration. For the great class of Recepts belongs plainly to the former, that of Concepts plainly to the latter. At the same time it is clear that the distinction between spontaneous and voluntary processes does not strictly coincide either with the demarcation between any two of the historical stages marked out by Mr. Romanes, or with that between Recepts and Concepts generally. It is rather one which runs down through all the historical stages of development, and through both the groups of empirically distinct states which Mr. Romanes calls Recepts and Concepts. Recepts are not *wholly* spontaneous or automatic, nor are concepts *wholly* volitional. The greater or less prominence and importance of one or the other character is that which justifies the name given to either as a whole.

In the earliest days of the newly-born infant, for instance, there is doubtless volition mingled with the trains of spontaneous reintegration, which are set up, maintained, and chiefly governed, by the sensible impressions which are continually beating upon his brain through the organs of external sense. He is learning to perceive what adults call the ordinary world of objects. But his volition is

directed to produce rather than to modify this perceptive result. What it modifies is the order of primary precepts or perceived sensations, the lowest perceptive data, as they are given in actual presentation; as, for instance, in putting together in redintegration certain groups of visual and tactile perceptions into the complex perception of "things," and distinguishing such "things" from sounds, which are perceptions of a different sense, though arising in close connection with them. Even in this earliest stage of life the properly volitional or conceptual act is present, modifying that order of perception which is originally enforced by presentations, and which is afterwards spontaneously or automatically reproduced in redintegration.

But the modifications so introduced become themselves, in many cases, permanent, and are reproduced again and again in spontaneous redintegration, precisely as if they had originally been due to externally presented perceptions. Hence no stage of conscious redintegration is without constituents belonging to both kinds. There is always some spontaneous pabulum being supplied to, and modified by, volitional and conceptual action, and on the road towards becoming again a part of the permanent and therefore spontaneously recurring furniture of the mind. The perception of self, or self-consciousness in the full sense, that great turning-point in the history of individuals upon which Mr. Romanes rightly lays so much stress, is but a perception of a particular kind, which depends upon attention to distinctions perceived in consciousness simply, and which therefore arises just in the same way as the perception of ordinary external objects has been described as arising.

Now the conceptual act, which runs through and accompanies all the historical or evolutionary stages of intelligence, and not any one of those stages in particular, is what Logic has in view, when it speaks of concepts, universals, or general terms. It thereby contrasts these with their originally perceptive and afterwards spontaneously reproduced data. Redintegration is the field to which they belong, and which they divide exhaustively into the two distinct but inseparable members—spontaneous and voluntary redintegration. At the same time it is clear that, in order to do justice to the phenomena so described, Logic must consider and study them in the instances where they are found in their most complete and developed state, that is, in the last of the four historical stages discriminated by Mr. Romanes. It is in fact to that stage that Logic itself belongs, being a system founded on conceptual criticism of conceptual processes, and therefore, at least in point of kind, one among the most highly developed exercises of intelligence.